



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/669,186 | 09/24/2003 | Victor M. Benveniste | 02-IMP-037 | 2612 |

29393 7590 09/08/2005

ESCHWEILER & ASSOCIATES, LLC
NATIONAL CITY BANK BUILDING
629 EUCLID AVE., SUITE 1210
CLEVELAND, OH 44114

EXAMINER

FERNANDEZ, KALIMAH

ART UNIT PAPER NUMBER

2881

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/669,186

Applicant(s)

BENVENISTE, VICTOR M.

Examiner

Kalimah Fernandez

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 21-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 21-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. The term "relatively" in claim 5 is a comparative term, which renders the claim indefinite. The term "relatively" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 10, 14-17, and 21-26 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat No 5,760,405 issued to King et al.

3. King et al disclose a ribbon beam ion implantation system (see col.3, lines 42-44).
4. King et al disclose an extraction system (see col.8, lines 36-43).
5. King et al disclose a mass analyzer having a first and a second permanent magnet (48) (see also col.9, lines 4-13).
6. King et al disclose generating a substantially uniform magnetic field to select a species from a multiple species initially present in the ribbon-shaped beam (see col.9, lines 22-33).
7. As per claims 2 and 22, King et al disclose an acceleration system (see col.9, lines 64-66).
8. As per claims 3 and 26, King et al disclose the extraction system is a triode extraction system operative to produce a converging beam (see for example col.10, lines 1-10).
9. As per claims 4-5, King et al disclose a low energy beam of about 500 eV (~1000 eV) (col.10, lines 60-64).
10. As per claim 10, King et al disclose the multiple species include P⁺ (see col.8, lines 47-65).
11. As per claims 14 and 24, King et al disclose the ion beam has a width of about 300 mm (~250 mm) (see col.11, lines 11-13).

12. As per claims 15 and 23, King et al disclose an end station (see for example col.1, lines 59-66).

13. As per claims 16-17, King et al disclose the extraction control circuitry and setting predetermined voltages (see col.10, lines 1-10). Here, the term "operable" does not require actually performing a function, but only requires the ability to so operate.

14. As per claim 21, King et al disclose a ribbon beam ion implantation system (see col.3, lines 42-44). King et al disclose an extraction system (see col.8, lines 36-43). King et al disclose also a mass analyzer having a first and a second permanent magnet (48) (see also col.9, lines 4-13). Further, King et al disclose selecting a species and rejecting other species of the multiple species of the ion beam via a permanent magnet based mass analyzer (see col. 9, lines 22-33).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 9 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over King et al and in view of US Pat No 6,573,517 issued to Sugitani et al.

17. King et al teach the claimed invention except for boron, BF₃, PF₅, and As₅.

18. However, Sugitani et al illustrate the known desirability of these sources in ion implantation. Sugitani et al teach boron ions by way of example (see col.2, lines 25-31). Sugitani et al also obviously suggest other variation such as BF₃, PF₅ and As₅ known in the art.

19. It would have been obvious to an ordinary artisan at the time of the invention to combine King et al and Sugitani et al, because the recited sources are notoriously old in the art and the selection of either of these sources fall within the level of general skill in the art to select a known material on the basis of its suitability for intended use.

20. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over King et al.

21. King et al teach the claimed invention, but does not explicitly teach a 5cm long mass analyzer, the recited magnetic field orientation, rapidly decaying fringes, and a wafer size of 300 mm.

22. However, these limitations would have been obvious to an ordinary artisan in view of King's disclosure. Specifically, these limitations are art-recognized result-effective variables.

Response to Arguments

23. Applicant's arguments, see reply, filed 5-6-05, with respect to the rejection(s) of claim(s) 1-17 and 21-26 under 102 and 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of King et al.

Conclusion

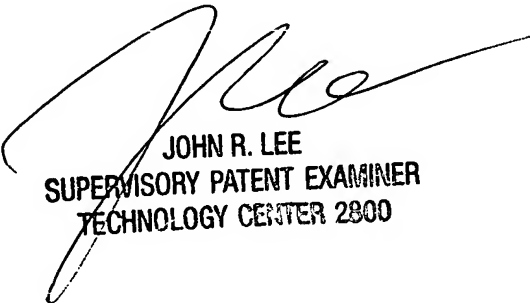
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kalimah Fernandez whose telephone number is 571-272-2470. The examiner can normally be reached on Mon-Tues 6:30-3:30; Wed-Thurs 8-5 and Fri.9am-6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on 571-272-2477. The

fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KF



JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800